



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/656,334	09/08/2003	Akitaka Makino	648.43120X00	9217
20457	7590	08/10/2005		EXAMINER
ANTONELLI, TERRY, STOUT & KRAUS, LLP			MOORE, KARLA A	
1300 NORTH SEVENTEENTH STREET				
SUITE 1800			ART UNIT	PAPER NUMBER
ARLINGTON, VA 22209-3873			1763	

DATE MAILED: 08/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/656,334	MAKINO ET AL.
	Examiner Karla Moore	Art Unit 1763

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 11 May 2005.
 2a) This action is **FINAL**. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1 and 7-22 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1 and 7-22 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 08 September 2003 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>0105</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 6,286,230 to White et al.
3. White et al. disclose a vacuum processing apparatus, in Figure 9, comprising: a transfer unit (22) disposed at the center thereof; plural processing chambers (10A and 10B), each processing chamber having a processing table (not numbered) for supporting an object to be processed and carrying out processing using a gas; and a mass flow controller (69; column 6, rows 11-14 and 35-40) interposed between two of the plural processing chambers for supplying gas to the two of the plural processing chambers. Also see column 8, rows 27-41.
4. With respect to claim 7, the two of the plural processing chambers are coupled to the transfer unit so as to be adjacent one another and the mass flow controller is interposed between the two of the plural processing chambers which are adjacent to one another (see Figure 9).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly

Art Unit: 1763

owned at the time any inventions covered therein were made absent any evidence to the contrary.

Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over White et al.

8. White et al. disclose the invention substantially as claimed and as described above.

9. However, White et al. fail to teach the mass flow controller includes a first mass control unit for supplying gas to one of the two adjacent processing chambers and a second mass flow control unit for supplying gas to another of the two adjacent processing chambers, the first and second mass flow controller units being disposed with respect to one another in a vertical direction.

10. Applicant's claim merely provides for the addition of a second mass flow control unit and the units provided in an arrangement that would be obvious to one of ordinary skill in the art. The courts have ruled that the mere duplication of parts has no patentable significance unless a new and unexpected result is produced. In re Harza, 274 F.2d 669, 124 USPQ 378 (CCPA 1960). Examiner also notes that White et al. uses language (speaking in the plural sense at column 6, rows 34-40, i.e. "pipes or other conduits") which would suggest to one of ordinary skill in the art that a gas supply can be connected via more than one pipe (or conduit, etc.) which would necessarily be provided with a mass flow controller as taught. With respect to which of the plurality of controllers supplies gas to which chamber, Examiner notes that as applied above, a plurality of controllers in White et al. would be duplicates of each other and thus would each be capable of supplying gas to each of the two chambers, therefore reading on the limitation that one controller supplies gas to one of the processing chambers and another controller supplies gas to another of the chambers. Further, with respect to the arrangement of the controllers, the courts have ruled that the mere rearrangement of parts which does not modify the operation of a device is *prima facie* obvious. In re Japiakse, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950). In re Kuhle, 526 F.2d 553, 188 USPQ 7 (CCPA 1975).

11. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over White et al. as applied to claim 8 above and further in view of U.S. Patent No. 6,558,506 to Freeman et al.

Art Unit: 1763

12. White et al. disclose the invention substantially as claimed and as described above.
13. However, White et al. fail to teach the two adjacent processing chamber are detachably connected to the transfer unit.
14. Freeman et al. disclose a processing system with detachable processing chambers for the purpose of providing a system that is simple to manufacture, assemble and maintain (column 2, rows 17-54).
15. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided processing chambers detachably connected to a transfer unit in White et al. in order to provide a system that is simple to manufacture, assemble and maintain as taught by Freeman et al.

16. Claims 10-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,286,230 to White et al. in view of U.S. Patent No. 6,558,506 to Freeman et al. and by Japanese Patent No. 08-127861 A to Naito et al.
17. White et al. disclose a vacuum processing apparatus, in Figure 9, comprising: at least one processing chamber (10 A and 10B) being subjected to a vacuum state for processing a wafer disposed therein, the at least one processing chamber being supplied with a gas; wherein the at least one processing chamber includes two vacuum processing chambers disposed adjacent to one another; and a mass flow controller (69; column 6, rows 11-14 and 35-40) interposed between two of the plural processing chambers for supplying gas to the two of the plural processing chambers. Also see column 8, rows 27-41. While White et al. do not explicitly teach a plurality of controllers, Applicant's claim merely provides for a plurality of controllers used in the same way. The courts have ruled that the mere duplication of parts has no patentable significance unless a new and unexpected result is produced. In re Harza, 274 F.2d 669, 124 USPQ 378 (CCPA 1960). Examiner also notes that White et al. uses language (speaking in the plural sense at column 6, rows 34-40, i.e. "pipes or other conduits") which would suggest to one of ordinary skill in the art that a gas supply can be connected via more than one pipe (or conduit, etc.) which would necessarily be provided with a mass flow controller as taught.

Art Unit: 1763

18. However, White et al. do fail to teach the two adjacent processing chamber are detachably connected to the transfer unit.
19. Freeman et al. disclose a processing system with detachable processing chambers for the purpose of providing a system that is simple to manufacture, assemble and maintain (column 2, rows 17-54).
20. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided processing chambers detachably connected to a transfer unit in White et al. in order to provide a system that is simple to manufacture, assemble and maintain as taught by Freeman et al.
21. White et al. further fail to teach the controllers are capable of supplying a processing gas to generate plasma which is utilized to process a wafer disposed in the processing chamber(s).
22. Naito et al. teach providing plasma generation means and a plasma processing gas to adjacent chambers of a plural vacuum chamber treating device for the purpose of performing a cleaning process to decompose away reaction by-products (abstract).
23. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided providing plasma generation means and a plasma processing gas in White et al. in order to decompose away reaction by-products as taught by Naito et al.
24. With respect to claim 11, a transfer chamber (22) is provided in White et al. See Figure 9. A transfer chamber (Figure 2, 14) is also provided in Freeman et al.
25. With respect to claim 12, both the transfer chamber of White et al. (also see Figure 1) and Freeman et al. are of a polygonal shape.
26. With respect to claims 13, 16 and 19, which are drawn to the arrangement of the plural controllers, the courts have ruled that the mere rearrangement of parts which does not modify the operation of a device is *prima facie* obvious. In re Japikse, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950). In re Kuhle, 526 F.2d 553, 188 USPQ 7 (CCPA 1975). With respect to which of the plurality of controllers supplies gas to which chamber, Examiner notes that as applied above, a plurality of controllers in White

Art Unit: 1763

et al. would be duplicates of each other and thus would each be capable of supplying gas to each of the two chambers, therefore reading on the limitation that one controller supplies gas to one of the processing chambers and another controller supplies gas to another of the chambers.

27. With respect to claims 14, 17 and 20, as noted above, the plural controllers are disposed in a space between the two adjacent vacuum processing chambers.

28. With respect to claims 15, 18 and 21-22, White et al. and Freeman et al. do not teach the plural controllers detachable from the vacuum processing apparatus as one unit.

29. However, Freeman et al. do teach that by providing detachable parts on a plural chamber processing apparatus a system that is simple to manufacture, assemble and maintain can be provided as discussed above.

30. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided detachable plural controllers as one unit in White et al. and Freeman et al. in order to provide a system that was simple to manufacture, assemble and maintain can as taught by Freeman et al.

Response to Arguments

31. Applicant's arguments filed 11 May 2005, with respect to claim 1 have been fully considered but they are not persuasive. Applicant argues that the disclosure of White et al. teaches additional means for assisting in controlling flow besides a mass flow controller, 69, may be provided and that these means are not taught as being positioned between two processing chambers. While this may be true, Applicant's claims do not necessitate that all means in any way associated with controlling gas flow are provided between two processing chambers. What Applicant's claim 1 does recite is that "a mass flow controller" is interposed between two processing chambers. This is disclosed in White et al.

Art Unit: 1763

Conclusion

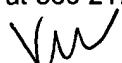
32. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karla Moore whose telephone number is 571.272.1440. The examiner can normally be reached on Monday-Friday, 9:00 am-6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on 571.272.1435. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Karla Moore
Patent Examiner
Art Unit 1763
8 August 2005


PARVIZ HASSANZADEH
SUPERVISORY PATENT EXAMINER